

Thermodynamics and Structure (Cont.)

SOV/2809

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Thermodynamics and Structure (Cont.)

SOV/2809

Vasenko, Ye. N., A. P. Chernyavskaya, and N. V. Chernaya.
Infrared Spectra of Electrolytic Solutions in Formamide

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Levshin, V. L., Ye. G. Baranova, L. D. Derkacheva, and
L. V. Levshin. Study of Association in Concentrated
Solutions of Dyes by Means of Absorption and Luminescence
Spectra

275

Levshin, L. V. Effect of Ionization and Association on
Optical Properties of Complex Organic Molecules

285

AVAILABLE: Library of Congress

Card 10/10

TM/jmr
1-23-60

YUKHNOVSKIY, I.R. [Iukhnova'kyi, I.R.]

Statistical theory of ionic systems. Ukr. fiz. zhnr. 4 no.2:167-176
Mr-ap '59. (MIRA 13:1)

L'vovskiy gosudarstvennyy universitet.
(Ions) (Coulomb functions)

YUKHNOVSKIY, I.R. [Yukhnovs'kyi, I.R.]; RAKHIMOVA, I.Sh. VIADIMIROV, V.V.
[Vladymyrov, V.V.]

Contribution to the theory of systems of charged particles in an
external field. Ukr. fiz. zhur. 4 no.3:334-344 My-Je '59.
(MIRA 13:2)

L'vovskiy gosudarstvennyy universitet im. I. Franko.
(Plasma (Ionized gases))

24(5)

AUTHOR:

Yukhnovskiy, I. R.

SOV/26-126-3-27/69

TITLE:

The Free Energy of a System of Charged Particles (Svobodnaya energiya sistem zaryazhennykh chastits)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 3, pp 557 - 560 (USSR)

ABSTRACT:

In the introduction to the present paper it is pointed out that the calculation of such a system must be carried out by means of a combined method, in which the effect of Coulomb reaction is calculated according to the method of the collective variable (D. N. Zubarev) (Ref 1), and the short interaction by Mayer's method of group integrals. In an already published paper by the same author (Ref 2) a cutoff Coulomb potential was used for a system of various ions. It is intended to be shown in the present paper that a cutoff is unnecessary for ion systems. The equation of free energy is obtained by calculating the thermodynamic quantities and the distribution functions. The author proceeds from a neutral system of ions, which is described by the equation (1). The formula for the free energy is then obtained from the configuration integral of the system by expansion in series, where the "short-range"

Card 1/2

The Free Energy of a System of Charged Particles

SOV/20-126-3-27/69

and the "Coulomb" particles are taken into account. In the case of a high concentration, the "short-range", and in the case of a weak concentration the Coulomb forces predominate. Finally, the free energy for weak concentrations is calculated. There are 4 Soviet references.

ASSOCIATION: L'vovskiy gosudarstvennyy universitet im. Ivana Franko
(L'vov State University imeni Ivan Franko)

PRESENTED: January 15, 1959, by N. N. Bogolyubov, Academician

SUBMITTED: January 9, 1959

Card 2/2

YUKHNOVSKIY, I.R. [Iukhnovs'kyi, I.R.]

Statistical theory of systems of interacting ions and dipole particles.
Ukr. fiz. zhur. 6 no.3:333-339 My-Je '61. (MIRA 14:8)

1. L'vovskiy gosudarstvennyy universitet im. IYa. Franka.
(Ions)
(Dipole moments)

YUKHNOVSKIY, I.R.

Statistical theory of mixed ion-dipole systems of interacting particles. Dokl. AN SSSR 136 no.6:1317-1320 P '61. (MIRA 14:3)

1. L'vovskiy gosudarstvennyy universitet im. Ivana Franko.
Predstavleno akademikom N.N. Bogolyubovym.

(Ions)

(Dipole moments)

YUKHNOVSKIY I. R.

36095
S/185/62/007/003/005/015
D299/D301

4,4500

AUTHOR:

TITLE:

PERIODICAL:

Yukhnova'kyy, I.R.

Spatial distribution of particles by the method of
collective variables

Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 3, 1962
267 - 276

TEXT:

Formulas are derived for the self-consistent potential Φ_{ab} and the self-consistent free energy F_c of a system of ions and dipoles. Spheric-symmetrical functions are introduced, characterizing the space distribution of charges. On passing to a point distribution, one obtains a generalized expression for the energy of interaction U of point particles. Collective variables are introduced by means of a Fourier representation for U ; (these variables are Fourier images of the distribution functions of charges and dipoles). By integrating the expression for U with respect to the collective variables, one obtains:

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963120008-1

Card 1/5

YUKHNOVSKIY I. R.

36095

S/185/62/007/003/005/015
D299/D301

4,4500

AUTHOR:

Yukhnovs'kyi, I.R.

TITLE:

Spatial distribution of particles by the method of collective variables

PERIODICAL:

Ukrayins'kyi fizychnyy zhurnal, v. 7, no. 3, 1962
267 - 276

TEXT:

Formulas are derived for the self-consistent potential Φ_{ab} and the self-consistent free energy F_c of a system of ions and dipoles. Spheric-symmetrical functions are introduced, characterizing the space distribution of charges. On passing to a point distribution, one obtains a generalized expression for the energy of interaction U of point particles. Collective variables are introduced by means of a Fourier representation for U ; (these variables are Fourier images of the distribution functions of charges and dipoles). By integrating the expression for U with respect to the collective variables ρ_k , one obtains:

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Spatial distribution of particles ... S/185/62/007/003/005/015
D299/D301

$$Z = \int \prod_i d\Omega_i \exp \left\{ -\frac{\bar{U}(0)}{\theta} + \frac{1}{2} \sum_i \alpha(k) - \ln(\alpha(k)+1) \right\} \times \\ \times \left(1 + \sum_{a,b} \frac{1}{V^2} N_a N_b \int g_{ab}^2 \frac{1}{3!} + \dots \right) dq_1 dq_2 + \dots \quad (9)$$

\mathcal{E}_{ab} is the self-consistent potential:

$$\mathcal{E}_{ab} = - \sum_k \lambda_a \lambda_b \frac{\alpha(k\Omega)}{\alpha(k\Omega)+1} e^{ikR} \quad (10)$$

An approximate formula is obtained for a self-consistent potential of a space-distribution of charges, viz.:

$$\left(\sum_{\alpha} \frac{4\pi}{V} \frac{e^{ikR}}{(\alpha(k)+1)k^2} \approx \frac{1}{i\pi x} \frac{1}{1+\alpha_2^2} \int \frac{ke^{ikx} dk}{k^2 + \frac{\alpha_2^2(k)}{1+\alpha_2^2}} \right) \quad (18)$$

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Spatial distribution of particles ...

S/185/62/007/003/005/015
D299/D301

if point charges are assumed, then

$$\epsilon_{ab}(R_i - R_j) = -\frac{1}{\theta} \cdot \frac{1}{1 + \chi_d^2} \cdot \frac{\exp \left(-\frac{\chi}{\sqrt{1 + \chi_d^2}} |R_i - R_j| \right)}{|R_i - R_j|}, \quad (19)$$

where $1 + \chi_d^2$ has the meaning of dielectric constant of the medium. Further, the term $\frac{\chi}{k}$ in Eq. (9), is considered, which represents the self-consistent free energy F_c :

$$F_c = -\frac{\theta}{2} \sum_k [\alpha(k) - \ln(\alpha(k) + 1)] = -\frac{1}{2} \frac{V\theta}{(2\pi)^3} \int d\Omega k^2 dk [\alpha(k\Omega) - \ln(\alpha(k) + 1)]. \quad (20)$$

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Spatial distribution of particles ...

S/185/62/007/003/005/015
D299/D301

In order to simplify the computations, schematic operations are introduced. Thereby, formulas are obtained which elucidate the structure of the self-consistent free energy. An approximate formula is obtained:

$$F_c = -\frac{1}{2} \int \frac{g(k^2)}{k^2} \left\{ x^4(1+\alpha^2 k^2) + x^2 x_d^2 \left[k^2 + \frac{\alpha^2 k^4}{2} + \frac{\beta^2 k^4}{2} \right] + \frac{x_d^4 \beta^2 k^6}{2} \right\} dk, \quad (26a)$$

which can be integrated, (in Eq. (26a), F_c does not depend on the angles). Further, the group integrals in Eq. (9) are considered. By integration of these integrals, an exponential function is obtained. The free energy can be expressed as the sum of several terms, including the exponents of that function. After transformations, one obtains

$$F_c^i = \theta \sum_k \frac{1}{1 + \chi_d^2} \frac{\chi^2}{k^2} - \ln \left(1 + \frac{1}{1 + \chi_d^2} \frac{\chi^2}{k^2} \right). \quad (33)$$

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Spatial distribution of particles ...

S/185/62/007/003/005/015
D299/D301

by setting in Eq. (33), α and β equal to zero, one obtains the exact Debye free-energy of self-consistent field theory with dielectric constant $\epsilon = 1 + \chi_a^2$. From Eq. (33) it is possible to pass to a point distribution by means of Bogolyubov's method of functional differentiation. From the final expression for the free energy, it is possible to obtain practically all the thermodynamic and static characteristics of the system; in particular, formulas are derived for the mean moment and for the dispersion of moments. The obtained formula for the free energy remains also valid for a system of associated ions. There are 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: E.F. Bertout, Phys. Rev., 91, 415, 1953.

ASSOCIATION: L'vivs'kyi derzhuniversytet im. Iv. Franka (L'viv State University im. Iv. Franko)

SUBMITTED: April 4, 1961

Card 5/5

L 16249-63

ENTRUSTED EPOCH - 1963

ACCESSION NO: AP3602117

5/19/63

AUTHOR: Yukhnovskyy I. R., Nekrot, A. O.

TITLE: Free energy and binary distribution functions of a mixed ion-dipole system.

SOURCE: Ukrains'kyy fizyohnyy zhurnal, v. 8, no. 6, 1963, 633-644.

TOPIC TAGS: ion, molecule, dipole, ion-dipole interaction virial coefficient, third virial coefficient, free energy, ion-dipole plasma, binary distribution function

ABSTRACT: This paper is continuation of a study published previously by the authors in the same journal in issue 7, 1962 and issue 8, 1963. A classical system consisting of ions and dipoles distributed in space is taken, and equations leading to the determination of the free energy of this system are developed. The free energy is thus determined accurately up to the third complete virial coefficient. Binary distribution functions are also calculated. Particular cases of these functions are functions for ion systems described by Yukhnovskyy in this journal in issue 4, 1959, and functions for systems of molecules described by

Card 1/2

L 18249-63

ACCESSION NR: AP3002117

N. N. Bogolyubov in the 1946 OTTI publication entitled "Problems of dynamic theory in statistical physics". Orig. art. has: 39 formulas.

ASSOCIATION: L'vivs'ky Derzhuniversytet im. Iv. Franka
(Lvov State University im. I. Frank)

SUBMITTED: 29 Nov 62

DATE ACQ: 12 Jul 63

ENCL: 00

SUB CODE: NS, PH

NO REF SOV: 008

OTHER: 000

Card 2/2

GLAUBERMAN, A.Yu. [Hlauberman, A.IU.], prof., otv. red.; RYBALKA, V.V., red.; SEN'KIV, M.T., dots., red.; VISHNEVSKIY, V.N., [Vysknevs'kyi, V.N.], dots., red.; YUKHNOVSKIY, I.R. [IUkhnovs'kyi, I.R.], dots., red.; PALYUKH, B.M., dots., red.; KVITKO, I.S., red.

[Problems in solid state physics] Pytannia fizyky tverdoho tila. L'viv, Vyd-vo L'vivs'keho univ., 1964. 117 p.
(MIRA 17:11)

2. Lvov. Universytet.

16356-65

S/0195/03

ACCESSION NR: AP4043092

AUTHOR: Yukhnovs'ky'y, I. R. (Yukhnovskiy, I. R.)

TITLE: Statistical operator and collective variables

SCOURCE: Ukrayins'ky'y fizy*chny'y zhurnal.

TOPIC TAGS: statistical operator, collective variables, interaction, fermion interaction

ABSTRACT: The estimation of an infinite trace of the statistical operator $\exp[-\beta(H_0 + H_1)]$ and the function $\exp[-\beta(H_0 + H_1)]$ is the symmetrical function of the eigenvalues of H_1 by means of the collective variables. The author is grateful to D. M. Zubov and I. M. Zubov for their help. Original has been deposited.

ACCESSION NR AP4043092

ASSOCIATION: L'vivs'kyy derzhumirov-sytet is.

SUBMITTED 31Oct63

INCL- 01

SUB CODE: MA, NP

NO INFO

Cond2: 2

L 16120-65 DWT(1) IJP(c)
ACCESSION NR: AP4044165

S/9165161

AUTHOR: Yekhnovs'ky'y, I. R. (Yekhnovskiy, I. R.)

TITLE: Statistical quantum sum and collective variables
in collective variables

SOURCE: krayns'ky'y fizy'chny'y zhurnal, 1981, 34, 1, p. 1-10

TOPIC TAGS: statistical quantum sum, collective variables, energy, phonon gas

ABSTRACT: In continuation of his previous work, the author computes the statistical sum of an ideal gas in terms of collective variables and investigates the results (D. N. Zubarev, DAN SSSR 45, #4(1954)). The results are derived for low and high temperatures. The results are given in a series, the first term of which gives the classical energy. Orig. art. has: 54 equations

Card 1/2

L 16120-65
ACCESSION NR: AP4044165

ASSOCIATION: L'vivs'kyi derzhuniversytet im. I. Y.

SUBMITTED: 15Nov63

ENCL: 00

SUB CODE: NP, MA

NO REF SOV: 00.

Card 2/2

08099-65
ACCESSION NR. AP00590A

operator of two-fermion interaction. The two diagrams for small values of k , and the diagrams for the first order of the term. Consequently the diagrams for the second order also shows that the small parameter for the expansion Brueckner parameter r_B , but $r_B^{1/4}$. The exchange diagrams are calculated. The expression obtained for the second-order diagrams in the series, is

$$E = \frac{22}{r_B^2} - \frac{0.916}{r_B} - \frac{0.46}{r_B^{3/2}}$$

is compared with the expression

$$E = \frac{1}{r_B^2} - \frac{0.16}{r_B} - \frac{0.16}{r_B^{3/2}}$$

given by M. Gell-Mann and K. A. Brueckner. The first term has 3 figures and 16 for the second.

Card 2/3

L 38094-67

ACCESSION NR: AP5005908

ASSOCIATION: L'vivs'kyi derzhavnyi universytet
(L'viv State University)

SUBMITTED: 14Feb64

INCL: 70

NR REF SOV: 004

OTHER: 105

Cont. 3/3

YUKHNOVSKIY, I.R.; NEKROT, A.A.

Some properties of binary functions of distribution of a
mixture of ions and dipole molecules. Ukr. fiz. zhur. 9
no.4:365-375 Ap '64. (MIRA 17:8)

1. L'vovskiy gosudarstvennyy universitet.

YUKHNOVSKIY, I.R. [Iukhnovs'kyi, I.R.]; TSYGANENKO, V.V. [TSyhanenko, V.V.];
VAVRUKH, M.V.

Mean energy of electron gas at absolute zero. Ukr. fiz. zhur. 10
no.2:135-146 F '65. (MIRA 18:4)

1. L'vovskiy gosudarstvennyy universitet.

YUKHNOVSKIY, I.R. [Iukhnova'kyi, I.R.]

The statistical operator and collective variables. Ukr. fiz. zhur.
9 no.7:702-714, J1 '64. (MIRA 17:10)

1. L'vovskiy gosudarstvennyy universitet im. I. Franko.

YUKHNOVSKIY, I.R. [Iukhnovs'kyi, I.R.]

Quantum statistical sum and collective variables. Part 2.
Transition function to collective variables. Ukr. fiz. zhur.
9 no.8:827-838 Ag '64. (MIRA 17:11)

1. L'vovskiy gosudarstvennyy universitet im. I. Franko.

YUKHNOVSKIY, P.M.

Following Il'ich's advice. Sakh.prom. 36 no.4:6-9 4p 162.

(MIRA 15:5)

1. Byvshiy predsedatel' Tsentral'nogo komiteta soyuza rabochikh
sakharnoy promyshlennosti.

(Sugar industry)

S/058/63/000/002/012/070
A059/A101

AUTHOR: Yukhnovs'kyi, I. R.

TITLE: On the calculation of the quantum statistical sum of a system of charged particles

PERIODICAL: Referativnyi zhurnal, Fizika, no. 2, 1963, 6, abstract 2B44
("Visnyk L'vivsk. un-tu.Ser. fiz.", 1962, no. 1(8), 50 - 52, Ukrainian)

TEXT: The quantum statistical sum is calculated for a system of interacting charged particles having free charges, in the general case. Difficulties connected with the presence of Laplacians appearing in the Hamiltonian in the quantized case are partly removed by way of applying the unitary displacement transformation. This procedure permits the elimination of operators in the exponents of integrands. The expression for the statistical sum is represented in the form of contour integral. The quantum corrections are investigated.

[Abstracter's note: Complete translation]

Card 1/1

S/058/63/000/002/013/070
A059/A101

AUTHOR: Yukhnovs'kyi, I. R.

TITLE: Application of the method of collective variables to calculating the quantum statistical sum

PERIODICAL: Referativnyi zhurnal, Fizika, no. 2, 1963, 6, abstract 2B45
("Visnyk L'vivsk. un-tu. Ser. fiz.", 1962, no. 1(8), 63 - 72, Ukrainian)

TEXT: The expression for the statistical sum obtained in the previous paper (abstract 2B44) is examined by introducing collective variables and functional differentiation.

[Abstracter's note: Complete translation]

Card 1/1

YUKHENOVSKIY, Ye.

Expensive self-initiated activity. Grazhd. av. 20 no. 1:21
Ja '63. (MIRA 16:4)

1. lineynaya ekspluatatsionno-remontnaya masterskaya
Khabarovskogo aeroporta.

(Aeronautics, Commercial--Management)

YUKHENOVSKIY, Yu.M.; PIRYAZEV, D.I.; VOLCHEK, F.R.

Rapid rolling conditions on blooming mills at the "Azoveta" plant. Sbor. trud. UNIM no.9:186-195 '64 (MIRA 18:1)

MELESHKO, A.M.; TKALICH, K.N.; YUKHNOVSKIY, Yu.M.

Studying the forward flow on continuous sheet rolling mills.
Met. i gornorud. prom. no.4:43-45 JI-Ag '65. (MIRA 18:10)

ACC NR: AR6035036

SOURCE CODE: UR/0058/66/000/008/B007/B007

AUTHOR: Nevidoms'ka, L. A.; Tokar, S. S.; Yukhnovs'kyy, I. R.

TITLE: Chemical potential of a system of charged particles and the potential's parametric curves accurate precision to the second virial coefficient

SOURCE: Ref. zh. Fizika, Abs. 8B70

REF SOURCE: Visnyk L'vivs'k. un-tu. Ser. fiz, no. 2, 1965, 19-26

TOPIC TAGS: ~~charged particle system~~, charged particle, particle physics, chemical potential, *ELECTROLYSIS, SOLUTION CONCENTRATION*

ABSTRACT: The chemical potential is calculated for a neutral system of charged particles. Graphs for the relationship between the coefficient of electrolysis activity and the solution concentration are numerically plotted. [Translation of abstract] [NT]

SUB CODE: 20/

Card 1/1

YUZHIC
GALAUKO, A.A.; TUKHO, I.A.; MURNEU, A., redaktor; KALECHYTS, G., tekhnicheskiy redaktor.

[The local soviets are the organizers of collective farm production;
work practices of local soviets of White Russia (1953-1956)]
Miasaovylia Sovety organizatory kalhasnai vytvorchastei; z vopytu
raboty miastsovykh Sovetau Belarusi (1953-1956 hh). Minsk,
Dziarzh.vyd-va BSSR, 1957. 134 p. (MIRA 10:11)
(White Russia--Soviets) (White Russia--Collective farms)

GANUSHCHAK, N.I.; YUKHOMENKO, M.M.; STADNICHUK, M.D.; DOMBROVSKIY, A.V.

Haloarylation of unsaturated compounds with aromatic diazo compounds. Part 18: Chloroarylation of diisopropenyl. Zhur. ob. khim. 34 no.7:2238-2243 J1 '64 (MIRA 17:8)

1. Chernovitskiy gosudarstvennyy universitet i Leningradskiy tekhnologicheskiy institut imeni Lensoвета.

ZOLOTUKHINA, K.G.; GANUSHECHAK, N.I.; YUKHOMENKO, M.M.; DOMBROVSKIY, A.V.

Tertiary amines and quaternary salts based on 4-chloro-1-aryl-2-butenes
of secondary and tertiary heterocyclic nitrogen bases. Zhur.ob.khim.
33 no.4:1222-1227 Ap '63. (MIRA 16:5)

1. Chernovitskiy gosudarstvennyy universitet.
(Amines) (Heterocyclic compounds)

YUKHOMENKO, M.N.; GANUSHCHAK, N.I.; DOMBROVSKIY, A.V.

Synthesis of 1-arylbuten-2-yl diethylmalonic esters and 1-arylbuten-2-ylacetic acids from chloroaryl butenes and sodium malonic ester.
Zhur. ob. khim. 33 no.8:2528-2532 Ag '63. (MIRA 16:11)

1. Chernovitskiy gosudarstvennyy universitet.

GANUSECHAK, N.I.; YUKHOMENKO, M.M.; ROZVAGA, R.I.; DOMBROVSKIY, A.V.

Syntheses based on diene condensation. Part 3: 2-Methyl-1-aryl-
and 2,3-dimethyl-1-arylanthraquinones. Zhur. ob. khim. 34 no.8:
2718-2721 Ag '64. (MIRA 17:9)

1. Chernovitskiy gosudarstvennyy universitet.

YUKHOMENKO, M.M.; GANUSHCHAK, N.I.; DOMBROVSKIY, A.V.

Synthesis of 1-arylbuten-2-ylacetylacetones. Ukr. khiz. zhur.
30 no.6:616-618 '64. (MIRA 18:5)

1. Chernovitskiy gosudarstvennyy universitet.

L 06504-67 EWP(j)/EWT(m) RM
ACC NR: AP7000488

SOURCE CODE: UR/0079/66/036/002 11/1253

AUTHOR: Ganushchak, N. I.; Yukhomenko, M. M.; Stadnichuk, M. D.; Shevchuk, M. I.

ORG: Chernovitskiy State University (Chernovitskiy gosudarstvennyy universitet);
Leningrad Technological Institute im. Lensovet (Leningradskiy tekhnologicheskii
institut)

TITLE: Synthesis of certain phosphonium salts and 1,5-diphenylpentadienes-1,3 on
the basis of chloroarylbutenes

SOURCE: Zhurnal obshchey khimii, v. 36, no. 6, 1966, 1150-1153

TOPIC TAGS: organic phosphorus compound, organic salt, organic synthetic process

ABSTRACT: The reaction of a number of chloroarylbutenes with triphenylphos-
phine yielded new triphenyl-(1-arylalkenyl-2)-phosphonium chlorides

$[ArCH_2C(R)+C(R')CH_2P(C_6H_5)_3]Cl^-$. The phosphonium salts were converted to the
corresponding 1,5-diphenylpentadienes-1,3 by reaction with sodium ethylate and
benzaldehyde. The infrared and nuclear magnetic resonance spectra of the pro-
ducts were studied. The diphenylpentadienes are oily, yellowish liquids,
which are readily soluble in the usual organic solvents, decolorize bromine
water and permanganate solution. They do not take part in diene synthesis re-
actions, even with such dienophiles as maleic anhydride with heating.
Orig. art. has: 2 figures and 1 table. [JPRS: 37,023]

SUB CODE: 07 / SUEN DATE: 03Jun65 / ORIG REF: 010

Card 1/1 mZE

UDC: 547.341

0923

1203

YUKHOV, I. starshiy prepodavatel'

Errors in radar tracking during rolling. Mor. flot 18 no.426
Ap '58. (MIRA 12:12)

1. Akademiya imeni Krylova.
(Radar in navigation)

ACC NR: AM6036119

(N)

Monograph

UR/

Skvortsov, Mark Ivanovich; YUkhov, Ivan Vasil'yevich; Zemlyanov, Boris Ivanovich;
Abchuk, Vladimir Avramovich; Mrykhin, Oktyabr' Aleksandrovich

Principles of ship maneuvering (Osnovy manevrirovaniya korabley) Moscow,
Voenizdat M-va obr. SSSR, 1966, 269 p. illus., biblio., 1 fold chart. Errata
slip inserted. Number of copies printed not given.

TOPIC TAGS: naval operation, marine engineering, ship navigation, naval tactic

PURPOSE AND COVERAGE: This book is intended for naval officers and students of
naval schools; it can be also used by the scientific and engineering staffs of
research institutes and the marine industry. Problems of ship navigation,
handling, and maneuvering at sea are discussed with particular application to
military purposes, such as approach to target or changing position of the ship
in relation to some specific object. Theories of probability, detection, and
errors are used extensively in the text, particularly for the theoretical and
practical analysis of problems of maneuverability. There are 16 references, all
Soviet.

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Card 1/2

UDC: 359:656.61.052

ACC NR: AM6036119

- Ch. 1. Principles of the general theory of ship maneuverability -- 9
- Ch. 2. Sea search for enemy -- 38
- Ch. 3. Determining elements of target motion -- 91
- Ch. 4. Changing distance and position in relation to an object -- 133
- Ch. 5. Special cases of maneuvering by a single ship -- 170
- Ch. 6. Principles for the evaluation of maneuvering accuracy -- 196
- Ch. 7. Joint maneuver of ships -- 209
- Ch. 8. Solving maneuvering problems with electronic computers -- 234

Appendix. Maneuvering tables (19 tables) -- 252

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SUB CODE: 15,17/

SUBM DATE: 03May66/

ORIG REF: 027/

OTH REF: 001/

Card 2/2

SOV/105-59-3-10/27

8(5)

AUTHOR: Yukhov, V. V., Engineer (Chelyabinsk)

TITLE: Synchronous Motor Compounding With Directly Connected Exciter
(Kompaundirovaniye sinkhronnykh dvigateley pri glukhom pod-
klyuchenii vozбудitelya)

PERIODICAL: Elektrichestvo, 1959, Nr 3, pp 82 - 85 (USSR)

ABSTRACT: Synchronous motors of the type MS-322-12/6 (2500 kva, 1920 kw, 6 kv, 1000 revs/min) with exciters of the type PN-40 (65 v, 320 a) or synchronous motors of the type MS-322-8/6 (1780 kva, 1350 kw, 6 kv, 1000 revs/min) with exciters of the type MP-543/2/5 (65 v, 360 a) are generally used to drive rotary pumps of the type 22-NDS. Circuits with conventional "magnetic stations" (magnitnaya stantsiya) are provided for starting and controlling. Test runs showed that such circuits are unreliable. For this reason they were re-designed to operate as direct starters with a direct connection of the exciter. These simplified units are notable for a manually regulated compounding device connected directly to the motor circuits. The compounding is carried out either according to the princi-

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Synchronous Motor Compounding With Directly Connected
Exciter

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ple used with generators, or by using the manually regulated exciter current, in which case the current passing through the excitation controller depends upon the compounding current. In order to vary the stability domain of the compounding unit, the connecting transformer is equipped with a movable winding, which is fed by the compounding current. Engineer A. V. Petukhov took part in the experiments. The advantages offered by the new starting device are as follows: 1) The circuits for starting, protection and control are very simple. 2) Powerful inertialess compounding devices with a uniform sensitivity markedly increase the dynamic stability of synchronous motors. 3) The use of the compounding unit accelerates the synchronization of the motors under load. 4) Such an installation somewhat accelerates the field degeneration in motors with a direct connection of the exciter and eliminated the possibility of inverting the sense of magnetization during starting operations. 5) If the parameters of the compounding unit are chosen correspondingly, there arises the possibility of abandoning a forced excitation by means of a relay. This unit, which operates with a compounding making

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use of the current passing through the excitation controller, exhibits still other advantages: 6) The system for the excitation of the motor is independent of the voltage transformer circuits and can be used for a forced excitation of motors operating at rated supply voltage under shock load. 7) Under otherwise equal conditions the motor excitation current is less dependent upon the operational voltage fluctuations and upon the temperature of the exciter windings of the motor and of the exciter. The General Specification Nr E-5/54 of the Tekhnicheskoye upravleniye MES (Technical Administration of the MES) limits the field of application of units with a direct connection of the exciter machine by the motor load at the end of starting up and by the rate of field deterioration. Protests against this specification are advanced and their checking is required. There are 3 figures and 2 tables.

SUBMITTED: April 18, 1958

Card 3/3

8(5)

AUTHORS:

Yukhov, V. V., Engineer,
Patukhov, A. V. Engineer (Chelyabinsk)

SOV/105-59-11-19/32

TITLE:

The Starting of a Compound Synchronous Motor in a Direct Connection of the Exciter

PERIODICAL:

Elektrichestvo, 1959, Nr 11, p 81 (USSR)

ABSTRACT:

The synchronous motor of type MS-322-8/6 (1780 kva, 1350 kw, 1000 rpm) with the exciter of type MP-543/2/5 (65 v, 360 a) provided for the drive with a centrifugal pump of type 22-NDS was reconstructed and provided with a starting circuit with indirect connection of the exciter. In the present paper experimental results are given on the automatic switching on of a spare aggregate and of the starting of the motor after the interruption of current supply. For all starting conditions to which the motor was subject in the experiments the voltages at the supply line were $0.86 U_n$ (U_n = rated voltage) at the beginning, amperage $5.6 I_n$ (I_n = rated current) and the power $1.15 P_n$ (P_n = rated power). After a reconnection following an interruption period of 3 or 2.45 seconds the voltages were

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The Starting of a Compound Synchronous Motor in
a Direct Connection of the Exciter

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0.34 and 0.43 U_n respectively. The further results of these experiments are summarized in table 1. In conclusion it is said that this circuit diagram guarantees not only a starting under load but also a starting after an interruption of the current supply. There are 1 table and 1 Soviet reference . ✓

SUBMITTED: April 18, 1958

Card 2/2

YUKHOV, V.V., inzh. (Chelyabinsk)

Calculation of systems for compounding synchronous motors.

(MIRA 14:3)

Elektrichestvo no.2:40-45 F '61.

(Electric motors, Synchronous)

YUKHOV, V.V., inzh.; KUZNETSOV, V.P., inzh.

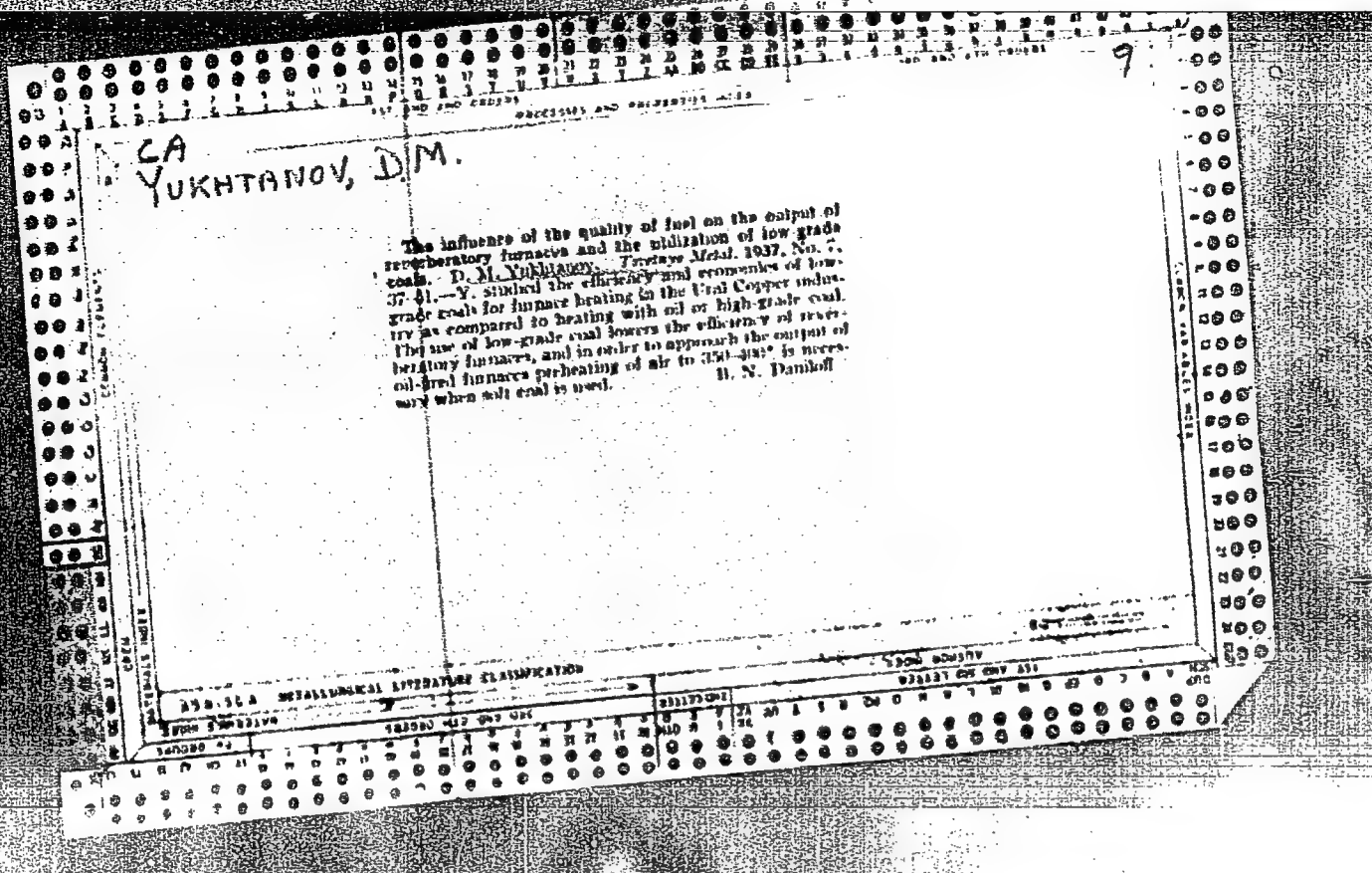
Automatic device for regulating the voltage of storage batteries.
Elek. sta. 33 no.8:85-86 Ag '62. (MIRA 15:8)
(Voltage regulators) (Storage batteries)

YUKHOVITSKIY, A.A.

"Application of Radio-active Isotopes in Solving Diffusion in Metals Theory Problems," A.A. Yukhovitskiy, M.E. Yanitskaya, Sotzkov, A.D, Moscow, USSR

Paper submitted for presentation at the International Conference on Radioisotopes in Scientific Research, Paris, 9-20 Sep 1957.

Moscow Steel Inst, Min. Higher Education, Moscow USSR



YUKHTANOV, B. M.

Investigation of oxidized ores of Almal'yk ore deposits
D. M. Yukhtanov. *Tekhnicheskaya Mekh.* 1937, No. 9, 64-81
A description of leaching of oxidized Cu ores at Almal'yk
(Russia). B. N. Danileff

ASH-51A METALLURGICAL LITERATURE CLASSIFICATION

7

YUKHTANOV, D. M.
CA

Melting difficultly fusible charges in reverberatory furnaces. D. M. Yukhtanov. *Tsvetnye Met.* 13, No. 12, 47 (1968). The use of difficultly fusible charges lowers the efficiency of vertical high-furnaces and increases the fuel consumption. These disadvantages can be overcome by incorporating with the charge a small proportion of a powerful fluxing agent: fluorspar, Na and K salts, etc., which lower the m. p. of the slag. A. Panincau-Confine

33-51.2 DETAILORICAL ALPHABETIC CLASSIFICATION

YUKHTANGV

CA

The influence of sodium oxide on the properties of slags of Karaakpal copper smelter. D. M. Yul'binayev, *Izvestiya Metall.* 1939, No. 10-11, 108-22. Typical composition of the Karaakpal smelter slags is approx. SiO_2 55, FeO 20, CaO 8 and Al_2O_3 20%. The results of lab. exps. conducted with the purpose of lowering the melting temp. and viscosity of slags led the authors to the following conclusions: (1) Introduction of alkali (Na_2O) into the charge lowers considerably the melting temp. of the slag. Addn. of 2% Na_2O lowers the melting temp. by about 100° . (2) The viscosity of the smelter slags, 420 poises at 1280° , is lowered to 120 poises by the introduction of 2% Na_2O . (3) The lowering of melting temps. and the increase of fluidity result in economy of fuel and in the decreased losses of Cu in the slags. Further work in the lab. and at the smelter is in progress with the purpose of

detg. the optimum conditions of smelting with the use of Na_2O . 14 references. B. N. Daniloff

B. N. Daniloff

A12.21 METALLURGICAL LITERATURE CLASSIFICATION

YUKHTANOV, D. M.

ea

Heap leaching of copper ores. D. M. Yukhtanov,
Tsvetnye Met. 1940, No. 4, 57-63.—A review of the
theory and practice. B. N. Daniloff

9

330.55.8 METALLURGICAL LITERATURE CLASSIFICATION

YUKHTANOV, Dmitriy Mikhaylovich

Cand. Technical Sci.

Deputy Dir., State Sci. Res. Inst. Nonferrous Metals, -1951-.

"Hydrometallurgy," Moscow, 1949.

Stalin 3rd Prize, 1950, publication.

YUKHTANOV, D.M.

DEMID, G.V.; KAYVANOV, I.S.; SAKHANSKIY, H.A.; STERNIN, I.M.; YUKHTANOV, D.M., kandidat tekhnicheskikh nauk, redaktor; PETROVA, H.S., tekhnicheskij redaktor.

[High-speed smelting in a reverberatory furnace; experience of skilled workman A.A. Iarusev] Skorostnaya plavka v otrazhatel'nykh pechakh; opyt mastera A.A. Iaruseva. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po cherno i tsvetnoi metallurgii, 1952. 68 p. (MIRA 9:12)
[Microfilm]

1. Russia (1923- U.S.S.R.) Ministerstvo tsvetnoy metallurgii. Tekhnicheskoye upravleniye. Tsentral'nyy institut informatsii.
2. Zamestitel' direktora instituta Gintsvetment (for Yukhtanov)
(Smelting furnaces)

TUKHTANOV, Dmitriy Mikhaylovich; SUVOROVSKAYA, N.A., redaktor;
~~MIKHAYLOVA, Y.V.~~, tekhnicheskii redaktor.

[Production of selenium and tellurium] Proizvodstvo selena i
tellura. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi
i tsvetnoi metallurgii, 1955. 95 p. (MLBA 8:8)
(Selenium) (Tellurium)

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 114 (USSR)
137-58-6-11988
AUTHOR: Yukhtanov, D.M.
TITLE: Production of Selenium From Anodic Slurries (Proizvodstvo selena iz anodnykh shlamov)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 9, pp 29-33
ABSTRACT: A description of the technology employed at the Shen'yan metallurgical plant (China) in the production of Se from anodic slurries by means of sulfatization in conjunction with collection of SeO_2 in a bubbler unit. Anodic slurries containing 11.5% Cu, 5.0% Ni, 1.3-1.4% Se, 0.14% Te, 3.0% As, and 10.0% Sb serve as the raw material from which the Se is extracted. The production of Se involves the following operations: 1) Sulfatization of anodic slurries; 2) sublimation of furnace gases to be employed in the sublimation of SeO_2 in bubbler units, formation of sulfatization products; 3) collection of SeO_2 from the effluent solution of selenous acid with its subsequent reduction to elemental Se through the formation of SO_2 ; 4) distillation of the raw Se. Sulfatization is carried out in two cast iron vats filled with H_2SO_4 , which is heated to a temperature of $80^\circ C$. Anodic

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001963120008-1

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137-58-6-11988

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 114 (USSR)

AUTHOR: Yukhtanov, D.M.

TITLE: Production of Selenium From Anodic Slurries (Proizvodstvo selena iz anodnykh shlamov)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 9, pp 29-33

ABSTRACT: A description of the technology employed at the Shen'yan metallurgical plant (China) in the production of Se from anodic slurries by means of sulfatization in conjunction with collection of SeO_2 in a bubbler unit. Anodic slurries containing 11.5% Cu, 5.0% Ni, 1.3-1.4% Se, 0.14% Te, 3.0% As, and 10.0% Sb serve as the raw material from which the Se is extracted. The production of Se involves the following operations: 1) Sulfatization, roasting of anodic slurries. 2) sublimation of SeO_2 from the sulfatization products. 3) collection of furnace gases to be employed in the sublimation of SeO_2 in bubbler units, formation of a solution of selenious acid with its subsequent reduction to elemental Se through the formation of SO_2 . 4) distillation of the raw Se. Sulfatization is carried out in two cast iron vats filled with H_2SO_4 which is heated to a temperature of 80°C . Anodic

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137-58-6-11988

Production of Selenium From Anodic Slurries

slurries containing 30-35% of moisture are poured into the vats under constant stirring. After all of the slurries have been transferred, the temperature is raised to 200-250° while the mixture is constantly stirred. The process of sulfatization requires 4-5 hours. The sublimation of SeO_2 is performed in a furnace lined with fireclay brick. Optimal condition for the operations are as follows: temperature, 400-500°; duration of the process, 4-5 hours, thickness of the layer, 33 mm. Up to 93-95% of Se are sublimated under these conditions. After sublimation only 0.05-0.1% of Se is contained in the residue. Gases from the furnace are captured in three bubbler units connected in series. Raw Se, containing 96-97% of Se, is obtained in these units. The raw Se is refined in a cast iron retort with dimensions of 150x200x500 mm installed in an electrical furnace with Nichrome windings. The process requires 6-9 hours at a temperature of 640°. The yield of Se amounts to 85-90%. The distillation residue is returned to the sulfatization stage. Taking into account all losses and the distillation residue that is returned from the retort for additional processing, the extraction of Se from anodic slurries constitutes 88-90%. Advantages of the technological procedure described are pointed out. 1. Selenium--Production 2. Selenium oxides--Sublimation 3. Selenium oxides--Sublimation 4. Waste gases--Applications 5. Sulfuric acid--Applications C.S.

Card 2/2

AZOS, S.; AREF'YEV, A.; ARTAMONOV, I.; BABINA, I.; BERNGOVSKIY, V.; BLOZHKO, V.;
 BRAVERMAN, A.; BYKHOVSKIY, Ya.; VINOGRADOVA, M.; GALANKINA, Ye.;
 GIL'DENGERSH, P.; GLOBA, T.; GREYER, N.; GORDON, G.; GUL'DIE, I.;
 GULYAYEVA, Ye.; GUSHCHINA, I.; DAVIDOVSKAYA, Ye.; DAMSKAYA, G.;
 DERKACHEV, D.; YEVDOKIMOVA, A.; YEGUNOV, V.; ZABELYSHINSKIY, I.;
 ZAYDENBERG, B.; AZMOSHNIKOV, I.; ITKINA, S.; KARGHEVSKIY, V.;
 KIUSHIN, D.; KUVINOV, Ye.; KUZNETSOVA, G.; KURSHAKOV, I.;
 LAKERNIK, M.; LEYZEROVICH, G.; LISOVSKIY, D.; LOSKUTOV, P.;
 MAL'EVSKIY, Ya.; MASLIANITSKIY, I.; MAYANTS, A.; MILLER, L.;
 MITROPANOV, S.; MIKHAYLOV, A.; MYAKINENKOV, I.; NIKITINA, I.;
 NOVIN, B.; OGNEV, D.; OL'KHOV, N.; OSIPOVA, T.; OSTRONOV, M.;
 PAKHOMOVA, G.; PETKER, S.; PLAKSIN, I.; PLETNEVA, N.; POPOV, V.;
 PRESS, Ya.; PROKOP'YEVA, Ye.; PUGHKOV, S.; REZKOVA, F.; RUMYANTSEV, M.;
 SAKHAROV, I.; SOBOL', S.; SPIVAKOV, Ya.; STRIGIN, I.; SPIRIDONOVA, V.;
 TIMKO, Ya.; TITOV, S.; TROITSKIY, A.; TOLOKONNIKOV, K.; TROPIMOVA, A.;
 FEDOROV, V.; CHIZHIKOV, D.; SHEYN, Ya.; YUKHTANOV, D.

Roman Lazarevich Veller; an obituary. TSvet. net. 31 no. 5: 78-79
 My '58. (MIRA 11:6)

(Veller, Roman Lazarevich, 1897-1958)

AUTHORS:

~~Yukhtanov, D.M.~~ and Burovoy, I.A. SOV/136-58-6-1/21

TITLE:

Production Automatic Process Units is the First Problem
in the Development of Integrated Automation of Production.
(Sordaniye avtomatizirovannykh tekhnologicheskikh
agregatov - pervoocherednaya zadacha v razvitii kon-
pleksnoy avtomatizatsii proizvodstva)

PERIODICAL:

Tsvetnyye Metally, 1958, ³/_A Nr 6, pp 1 - 4 (USSR)

ABSTRACT:

On May 12-16, 1958, an All-Union conference of industrial workers was held to discuss the development of integrated mechanisation and automation of production processes and the increased production of instruments and automation equipment. The authors suggest that efforts must now be made to progress from the automation of individual units to that of automation of complete plants and then works and to the automation of process control. They discuss the economic basis for the selection of priorities in automating, on the example of the copper industry where raw-material costs account for 60-65% and labour costs 15-17% of the total. Ancillary operations represent a fruitful field both for mechanisation and automation. The authors urge that the automation of units should be thoroughly studied and effected using as much proved

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SOV/136-58-6-1/21
Production Automatic Process Units is the First Problem in the
Development of Integrated Automation of Production

equipment and methods as possible. For shaft furnaces, efforts should be concentrated on a single experimental furnace. Leading technologists and designers should co-operate in automation work because of the importance of the plant aspect. Continuity of processes is of great importance for automation; therefore, regulating devices and direct measuring methods and automatic analysers (such as the automatic polarograph produced by K.B. Tsvetmetavtomatika, or the Gintsvetmet flame spectrophotometer), should be perfected. Correct design of automatic systems must also be studied. The authors conclude by urging that all non-ferrous metallurgical workers should concentrate their attention on automation.

Card 2/2

SOV/136-59-7-17/20

AUTHOR: B.N.S.

TITLE: Conference on Autoclave Processes

PERIODICAL: Tsvetnyye metally, 1959, Nr 7, pp 84-87 (USSR)

ABSTRACT: On 23-26 February 1959 a conference was held in Moscow for summing-up and coordinating work on autoclave processes in the metallurgy of heavy, non-ferrous, rare and noble metals. The conference was convened jointly by the Otdel Tsvetnoy metallurgii (Non-Ferrous Metallurgy Department) of the Gosplan SSSR (USSR), the GNTK of the USSR, the NTO for Non-Ferrous Metallurgy and the Gintsvetmet. The conference was opened by N.S. Seliverstov, GNTK of the USSR, who noted that applications of research on autoclave processes was being hampered in the USSR by lack of coordination. The conference heard reports as follows: D.M. Yukhtanov, Gintsvetmet, on progress throughout the world on the use of hydrometallurgical, particularly autoclave, methods for non-ferrous and rare metal production; G. N. Dobrokhotoy, Gipronikel', on nickel leaching practice at some Soviet works; N. I. Onuchkina and G. N. Dobrokhotoy

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Conference on Autoclave Processes

SOV/136-59-7-17/20

on the thermodynamics and kinetics of the selective reduction by hydrogen and carbon monoxide under pressure of nickel and cobalt from solution; I. Yu. Leshch and K. M. Shelepova, Gipronikel', on design decisions on the application of the flowsheets dealt with by G. N. Dobrokhotoev at the Yuzhuralnikel' and Severonikel Combines and the Ufaleyskiy (Ufa) Nickel Works; I. N. Maslenitskiy, Leningradskiy gornyy institut (Leningrad Mining Institute) on the advantages of a combined flotation-autoclave method for nickel-electrolysis of slimes containing platinum-group metals; V. B. Zhilkin, Severonikel' combine, and S. I. Sobol', Gintsvetmet, on the essentials of the neutral method of oxidizing leaching of nickel concentrate from converter-matte flotation; S. I. Sobol' on preliminary investigations on the development of a sulphurous-sulphuric method for leaching nickel and cobalt from oxidized nickel ores; N. N. Maslenitskiy, Mekhanobr, on the main results of investigations of the autoclave-soda process for treating tungsten-ore beneficiation products;

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Conference on Autoclave Processes

SOV/136-59-7-17/20

V. I. Poprukaylo, Mekhanobr, and D. A. Malakhov, Skopinskaya (Skopinsk) TsOF, separately, on problems in the application of an autoclave-soda flowsheet to scheelite and wolframite raw material; G. A. Meyerson, K. Ya. Shapiro, N. N. Khavskiy, R. A. Pavlyuk and A. P. Nadol'skiy, Krasnoyarskiy institut tsvetnykh metallov (Krasnoyarsk Non-Ferrous Metals Institute) on the treatment of tungsten concentrates in hermetical, heated ball-mills with acids or caustic alkalies; V. I. Spiridonova, S. I. Sobol', Ye. I. Gulyayeva, Z. L. Berlin, I. M. Nelen' and B. I. Rudenko, Gintsvetmet, on the treatment of prepared and unprepared sulphide molybdenum raw material by oxidizing autoclave alkaline leaching; I. M. Nelen' and S. I. Sobol' on the kinetics of oxidizing autoclave leaching; A. N. Zelikman and Z. M. Lyapina, Krasnoyarsk Non-Ferrous Metals Institute, on the results of a study of conditions for the selective separation of lower oxides of tungsten and molybdenum from their salt solutions by hydrogen under pressure; M. V. Darbinyan, Gorno-metallurgicheskiy institut (Mining-Metallurgical Institute)

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Conference on Autoclave Processes

of the Sovnarkhoz (economic council) of the Armyanskaya SSR (Armenian SSR), on his investigations of ammoniacal autoclave leaching under oxygen pressure of molybdenum concentrates; S. I. Sotol' on technical-economic factors of ammoniacal leaching; A. I. Sinel'nikova and I. N. Plaksin, Krasnoyarsk Non-Ferrous Metals Institute, on an oxidizing autoclave process for gold-containing raw material; N. G. Tyurin, Ural'skiy politekhnicheskii institut (Ural Polytechnic Institute) on the behaviour of noble metals in oxidizing autoclave leaching in thiosulphate solutions; A. L. Tseft and D. A. Taraskin and A. Yu. Dadabayev, Institut metallurgii i obogashcheniya AN Kaz SSR (Metallurgy and Beneficiation Institute of the AS Kaz SSR), respectively, on the physicochemical fundamentals and on works'trials of autoclave salt leaching of polymetallic materials; I. Yu. Leshch, Gipronikel', on the unsuitability of autoclave leaching for lime-containing materials; V. A. Bernshteyn, VAMI, on industrial experience of a continuous autoclave leaching process for bauxites; V. G. Tronev, IONKh AN SSSR (IONKh AS USSR), on compounds of some rare elements in

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SOV/136-59-7-17/20

Conference on Autoclave Processes

various valency states under oxygen and hydrogen pressure in the presence of anhydrous ammonia; Z. L. Berlin, Gintsvetmet, on autoclave design and operation; P. G. Yakovlev, Gipronikel', and N. Ye. Vishnevskiy, VNII neftekhim, on model studies on autoclaves and the development of mixers; M. A. Polyanov, K. B. Giredmet, on the design of an experimental high-pressure pulp pump. G. I. Shvarts, NIIKhIMMASH, on the selection of steel for acid leaching of cobalt matte and matte-flotation concentrate; Yu. I. Archakov, VNIIneftekhim, on corrosion of types IKh18N9T, 12KhGN, 10KhSND and 10GN steels in soda and alkaline solutions in the presence of metal salts and oxygen at 5 - 15 kg/mm²; V. I. Deryabina and N. N. Kalgatin, VNIIneftekhim, separately, on mechanical properties of hydrogen-affected steels. The conference made recommendations aimed at the extension and improvement of autoclave practice.

Card 5/5

SVODTSEVA, G.V.; YUKHTANOV, D.M.

Simultaneous production of impregnated minerals during the
recovery of heavy nonferrous metals in certain plants abroad.
(from foreign journals). TSvet. met. 33 no.7:98-102 J1 '60.

(MIRA 13:7)

(Nonferrous metals--Metallurgy)

S/080/60/033/009/003/021
A003/A001

AUTHORS: Yukhtanov, D.M., Pleteneva, N.B. ✓

TITLE: The Production of High-Purity Selenium

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 9, pp. 1951-1957

TEXT: The production of pure selenium from commercial selenium with 97.3% Se and from selenium with 99.99% Se was investigated. Commercial selenium contains a considerable amount of tellurium, the separation of which from selenium presents difficulties, because both elements are very similar. The separation is carried out by sublimation of the dioxides of the two metals. Commercial selenium is transformed to dioxide by burning in a flow of oxygen or a mixture of oxygen and nitrogen oxides. The burning temperatures used in the experiment were 500 and 560°C. The optimum conditions were found to be 560°C and an oxygen consumption of 1,000 ml/min. The stoichiometric oxygen consumption is 405 g per 1 kg of selenium. The actual consumption is 1 kg of oxygen, i.e., 250% of the theoretical. 99.99% selenium needs less oxygen and the burning is faster. At 560°C and a consumption of 500 ml/min the burning rate of 99.99% selenium is 100 g/hour, of commercial selenium 15 g/hour. The sublimation of selenium di-

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The Production of High-Purity Selenium

3/080/60/033/009/003/021
A003/A001

oxide was carried out in an air flow at 320-350°C. For a batch of 230-250 g selenium it lasted 2 hours. Selenium dioxide was washed with distilled water and elemental selenium was precipitated from selenious acid thus obtained. Hydrazine hydrate ($\text{N}_2\text{H}_4 \cdot \text{H}_2\text{O}$) is a good reducing agent. Its consumption is 72% based on the weight of selenium. Spectral analysis showed that high-purity selenium can be obtained from commercial selenium with 97.3% Se. There are 3 tables, 3 figures and 4 references: 3 Soviet, 1 German.

SUBMITTED: February 17, 1960

Card 2/2

MOLCHANOV, A.A.; YUKHTANOV, D.M.

Efficient utilization of copper and copper-zinc pyritic ores.
(MIRA 14:4)

TSvet. met. 33 no.6:21-25 Is '60.

(Copper ores)

(Zinc ores)

S/137/61/000/006/088/092
A006/A101

AUTHORS: Yukhtanova, N.S., Gromova, V.S., Klark, G.B.

TITLE: Corrosion resistance of aluminum alloys with different galvanic coatings under atmospheric conditions

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 6, 1961, 51, abstract 61401 ("Tr. In-ta fiz. Khimii, AN SSSR", 1960, no. 8, 173 - 180)

TEXT: During three years natural tests were made with Al-alloys of the following grades: A-1, A-2, A-1 (D1), A-16 (D16), Al-9. The tests were performed with alloys in delivery state and having galvanic coatings of Zn, Cd or the ПOC-40 (PGS-40) alloy (Pb-Sn). The tests were made under various climatic conditions. The thickness of the coatings was 40 μ .

Ye. Layner

[Abstracter's note: Complete translation]

Card 1/1

YUKNA, R.D., Cand Tech Sci -- (diss) "Study of certain
problems questions of electromagnetic ~~resonance~~ shielding *on* with
shields
~~resonance~~ commensurable with ~~the~~ *length* wave length."

Riga 1958, 1h pp with sketches (Latvian State Univ im

Petr Stuchka) 175 copies (KL, 39-58, 110)

- 50 -

SOV/112-59-5-9989

6(4)

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 5, p 223 (USSR)

AUTHOR: Yukna, R. D.

TITLE: Shielding a Vertical Grounded Radiator by a Cylindrical Shield With an End or Ring Aperture

PERIODICAL: Uch. zap. Latv. un-t, 1958, Vol 21, Nr 7, pp 153-172

ABSTRACT: The problem of finding the shielding effect of a grounded vertical cylindrical shield with respect to a linear radiator placed in the shield axis is being solved. Two cases are considered: (1) incomplete shielding due to an open end of the shield; (2) incomplete shielding due to a round slit perpendicular to the shield axis and placed at an arbitrary height. Both cases are solved by means of introducing equivalent surface magnetic currents and using the specular-image method; both the ground and the shield are assumed to have perfect conductance. In the first case, calculations according to the first-approximation formulae show that the radiative capacity of the shield

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SOV/112-59-5-9989

~~Shielding~~ a Vertical Grounded Radiator by a Cylindrical Shield With an End or

currents amounts only to about 1% of the power radiated by the end aperture (the shield is not excited). In the second case, the shield is highly excited, so that the radiative power through the slit amounts only to a few per cent of the shield radiation power. An inference is drawn that the radiation of a large shield should be limited either by eliminating the coupling with the active element or by detuning the shield far away from the working frequency.

D.M.V.

Card 2/2

USSR/Chemistry - Polarographic analysis

Card 1/1 : Pub. 245 - 1/10

Authors : Goldshteyn, Ya. P.; Sinyakova, S. I.; and

Title : Adaptation of oscillographic polarography for determination of Ti

Periodical : Zhur. anal. khim. 9/5, 255-264, September

Abstract : A method for polarographic or oscillographic determination of Ti in the presence of Fe, V, Cr, Ni and Mo. The mechanism of reduction of Ti compounds in the presence of tartarate, citrate and ascorbic acid, in sulfuric acid, are explained. An anion of sodium oxalate was found to be most effective. The effect of Fe, V, Cr, Ni and Mo on the Ti current, is elucidated. Eleven references are given. 1-Belgian and 3-Czech 1932-1933.

Institution : Acad. of Sc. USSR, The V. I. Vernadsky Institute of Geochemistry and Analytical Chemistry, Moscow

Submitted : March 10, 1954

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SOV / 20-120-1-37/63

AUTHOR: Yukhtanova, V. D.

TITLE: The Determination of Polarographic Diffusion Coefficients by Means of a Rotating Disk Electrode (Opredeleniye polyarograficheskikh koeffitsiyentov diffuzii s pomoshch'yu vrashchayushchegosya diskovogo elektroda)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol..120, Nr 1, pp.137-139 (USSR)

ABSTRACT: At present only insufficient data are available on the so-called polarographic diffusion coefficient, i.e. on the so-called coefficients of diffusion in the case of an excess of the foreign electrolyte. Therefore the aim of the present paper is the determination of the diffusion coefficients by means of the reliable and relatively simple method of the rotating disk electrode. First the formula of V. G. Levich for the diffusion coefficient is given. By means of this formula the author calculates the diffusion coefficients of the ions Ca^{2+} , Tl^+ , Pb^{2+} and Zn^{2+} . The investigations were carried out by means of a copper amalgamated disk electrode with a diameter of $4,997 \pm 0,002$ mm. These experi-

Card 1/3

The Determination of P
Rotating Disk Electrode
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Card 2/3

SV20-120-1-37/63

The Determination of Polarographic Diffusion Coefficients by Means of a Rotating Disk Electrode

PRESENTED: August 28, 1957, by A. N. Frumkin, Member, Academy of Sciences, USSR

SUBMITTED: August 27, 1957

- | | |
|-------------------------------|------------------------------------|
| 1. Cadmium ions--Diffusion | 2. Lead ions--Diffusion |
| 3. Thallium ions--Diffusion | 4. Zinc ions--Diffusion |
| 5. Polarization--Applications | 6. Copper electrodes--Applications |

Card 3/3

SOV/20-124-2-38/71

Yukhtanova, V. D.

The Migration Current on a Rotating Disk Electrode
(Migratsionnyy tok na vrashchayushchetsya diskovom elektrode)

Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 2, pp 377-379
(USSR)

PERIODICAL:

ABSTRACT:

If all ions in the solution have a simple charge and if the cation subjected to reduction has a common anion with the phonon, Eukin's formula has the form $I = 2I_d \left[M - \sqrt{M(M-1)} \right]$. Here I_d denotes the boundary value of the diffusion current in the case of lacking migration; M - the ratio between the entire anion concentration and the concentration of the ion subjected to reduction. The present paper investigates Eukin's formula at relatively low background concentrations. Measurements were carried out on a rotating amalgamated copper disk electrode at 25° in hydrogen-atmosphere. The potential was measured relatively to a 1n-calomel electrode. The experimental results were well reproducible within the entire measuring range. The pola-

Card 1/3

The Migration Current on a Rotating Disk Electrode

SOV/20-124-2-38/71

rization curves of the Tl-ion are shown in a diagram. One of these curves was plotted over a background of sodium-perchlorate with a 50-fold surplus. In this case the boundary current amounts to $I = 5.4 \mu\text{A}$. The second polarization curve was plotted at the same concentration with a lacking indifferent electrolyte. This curve has a rather distinctly marked horizontal portion, from which the boundary current $I = 10.6 \mu\text{A}$ can be calculated. The curve agrees with Eucken's formula, and by means of this formula it is possible to calculate the true diffusion currents in the case of highly diluted dilutions of the background. On the basis of the measuring series for the Tl-ion the authoress calculated the diffusion coefficients according to the formula by Levich. The values of these coefficients (as function of the square root of background concentration) suit a straight line, by the extrapolation of which to infinite dilutions, $D_{\text{extr}} = 19.90 \cdot 10^{-6}$ is obtained for the diffusion coefficient. This value agrees well with the value for infinitely diluted solutions ($D_{\infty} = 19.94 \cdot 10^{-6} \text{ cm}^2/\text{sec}$) which was calculated by means of the Nernst formula from mobility. The authoress

Card 2/3

The Migration Current on a Rotating Disk Electrode SOV/20-124-2-38/71

thanks Academician A. M. Frumkin for his valuable advice in connection with this work. There are 2 figures, 1 table, and 7 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: September 18, 1958, by A. N. Frumkin, Academician

SUBMITTED: September 12, 1958

Card 3/3

Yurk TANCOR, U.D.

PHASE I BOOK EXPLOITATION

SOV/4443

Akademiya nauk SSSR. Komissiya po analiticheskoy khimii

Metody opredeleniya primesey v chistyykh metallakh (Methods of Determining Admix-
tures In Pure Metals) Moscow, 1960. 411 p. (Series: Its: Trudy, 12) 3,500
copies printed.

Resp. Eds.: A.P. Vinogradov, Academician, and D.I. Ryabchikov, Doctor of Chemical
Sciences; Ed. of Publishing House: M.P. Volynets; Tech. Ed.: T.V. Polyakova.

PURPOSE: This collection of articles is intended for chemists, metallurgists, and
engineers.

COVERAGE: The articles describe methods for detecting and determining various ad-
mixtures and their traces in pure metals. Also discussed are many chemical,
physicochemical, electrochemical, spectrochemical and luminescence methods of
analyzing materials of high purity. The editors state that these methods have
been developed within the last five or six years by various Soviet scientific
institutes, and are now widely used in research and factory laboratories of the
Soviet Union. No personalities are mentioned. References, mostly Soviet,
accompany each article.

Card 1/9

Methods of Determining Admixtures(Cont.)

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GOKHSHEYN, Ya.P.; VOLYNETS, M.P.; YUKHTANOVA, V.D.

Determining the presence of copper, lead, zinc, nickel, iron
in high purity metallic germanium by spectral analysis

in: Zh. anal. khim., 1977, vol. 52, no. 1, p. 10-12, 10 refs.
(Germanium--Analysis) , P. 10-12

YUKHTANOVA, V.D.

Testing Rucken's formula by means of a rotating disc electrode.
Zhur.fiz.khim. 35 no.12:2778-2779 D '61. (MIRA 14:12)

1. Akademiya nauk SSSR, Institut elektrokhimii.
(Electrochemistry)

YUKHTIN, V.I., kandidat meditsinskikh nauk

Tuberculous tumorous lesion of the large intestine. Sov. med.
(MLBA 7:11)
18 no.9:33-34 S '54.

1. Iz kliniki obshchey khirurgii pediatricheskogo fakul'teta
(direktor - professor G.P.Zaytsev) II Moskovskogo meditsinskogo
instituta im. I.V.Stalina

(TUBERCULOSIS, GASTROINTESTINAL
tuberculous tumoral swelling of large intestine)

YUKHTIN, V.I.

Treatment of tetany by transplantation of the thyroid gland.
Vest.khir. 74 no.1:29-32 Ja-Y '54. (MLRA 7:2)

1. Iz kliniki obshchey khirurgii (zavednyushchiy - professor
G.P.Zaytsev) 2-go Moskovskogo gosudarstvennogo meditsinskogo
instituta im. I.V.Stalina).
(Tetany) (Thyroid gland--Transplantation)

YUKHTIN, V.I., kandidat meditsinskikh nauk

Some peculiarities of clinical and anatomical changes in sepsis
in connection with compound therapy. Khirurgia no.6:53-58 Je '55.

(MLRA 8:10)

1. Iz kliniki obshchey khirurgii pediatricheskogo fakul'teta
(zav.-prof. G.P.Zaytsev) II Moskovskogo meditsinskogo instituta
imeni I.V.Stalina)

(SEPTICEMIA AND BACTEREMIA, ther.

complex ther.,clin. & anatomical aspects)

YUKHTIN, V.I., kandidat meditsinskikh nauk

Cases of melanoblastoma of the fingers. Nov.khir.arkh. no.3:74-75
My-Ja '57. (MIRA 10:8)

1. Kafedra obshchey khirurgii (zav. - prof. G.P.Zaytsev) pediatriche-
skogo fakul'teta 2-go Moskovskogo meditsinskogo instituta. Adres
avtora: Moskva, Ul. Pavlovskaya, d.25, 4-ya gorodskaya klinicheskaya
bol'nitsa.
(FINGERS--CANCER)

YUKHTIN, V.I., kand.med.nauk; SHALEVICH, M.A.

Tuberculosis of the stomach. Sov.med. 21 no.11:113-117 N '57.
(MIRA 11:3)

1. Iz kliniki obshchey khirurgii (dir.-prof. G.P.Zaytsev)
pediatricheskogo fakul'teta II Moskovskogo meditsinskogo instituta i
patologoanatomicheskogo otdeleniya 4-y gorodskoy klinicheskoy
bol'nitsy (zav.-prof. Ya.L.Rapoport).
TUBERCULOSIS, GASTROINTESTINAL, case reports)

YUKHTIN, V.I., kandidat meditsinskikh nauk (Moskva, Pushkinskaya ul., d.16
kv. 8)

Gastrostomy with a musculo-aponeurotic press. Vest.khir. 78 no. 6
136-139 Je '57. (MLRA 10:8)

1. Iz kliniki obshchey khirurgii (zav. - prof. G.P.Zaytsev)
pediatricheskogo fakul'teta 2-go Moskovskogo meditsinskogo instituta
(STOMACH, surg.
gastrostomy with musculo-aponeurotic press)

YUKHTIN, V.I., dotsent (Moskva, Pushkinskaya ul., d.16, kv.8)

Selection of the surgical method in cancer of the large intestine. Vest.khir. 82 no.4:67-71 Ap '59. (MIRA 12:6)

1. Iz obshchey khirurgicheskoy kliniki (zav. - prof.G.P.Zaytsev)
- 2-go Moskovskogo meditsinskogo instituta im. N.I.Pirogova.
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YUKHTIN, V.I.

Single-stage ileocoloplasty in extensive resection of the large intestine in cancer. Vest.AMI SSSR 16 no.1:53-57 '61. (MIRA 14:3)

1. Klinika obshchey khirurgii pediatricheskogo fakul'teta II
Moskovskogo meditsinskogo instituta imeni N.I.Pirogova.
(COLON—CANCER)